



Rice Global E&C Forum  
Engineering &  
Construction

# RICE GLOBAL ENGINEERING & CONSTRUCTION FORUM



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resources & energy

*“Are you a Professional or Just an Engineer?”*

# What is a Professional

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- **Is a professional defined by:**
  - Level of Education**
  - Job Title**
  - Complexity of Job Description**
  - Salary Grade**
  - Society Perception**
  - Degree of Supervision Required**

**Or is it something else?**

# Definition of Professional

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**Arnold Thesis Number 1: There is no objective definition of a professional job or assignment. There is only a definition of “professional behavior”.**

**Arnold Thesis Number 2: Anyone who acts in a “professional manner” is by definition a “professional” no matter what the job assignment, level of education, etc.**

**Arnold Thesis Number 3: A “professional” always looks out for the best interest of his project, client, and society. This requires balance and judgment.**

**Arnold Corollary to Thesis Number 3: A “professional” does NOT make decisions based on his best interest, the best interest of his employer, or personal convenience.**

**So let’s discuss “Professional Behaviors” that will define if you are a “Professional”.**

# **1<sup>st</sup> Principle: Spend the Client's Money As If It Were Your Own**

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**Any job is a potential license to steal from your employer, client, etc.**

## **Definition of Client**

- The public**
- The client or employer**
- The project**
- Internal “clients”**

**Each individual must think about what he is doing in context of the best interest of the “client”.**

## **The drag reducer example**

**You must constantly ask yourself “Am I spending my time and thus the client's money wisely.”**

**You must not just carry out a task. You must understand how that task fits the client's needs.**

## **2<sup>nd</sup> Principle: We Owe the Client One Strong Argument**

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- **Professionals are hired for their brains**
- **You are not allowed to say:**

**“ I knew there was a better way but they wanted it done this way”.**

**“I knew he wouldn't listen”.**

**“This is standard practice, even though it doesn't make sense in this context.”**

# **3<sup>rd</sup> Principle: “Shut up and Do What the Client Wants”**

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- **Why might a client disagree:**
  - **You could be wrong**
  - **Different data**
  - **Comfort**
  - **Ego**

**Best interest of the client**

**Handle disagreements with care**

**Station controls example**

**But don't forget the following trump all**

- **Technical reality**
- **Safety**
- **Ethics**

# Exception: Technically It Will not Work

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- **Some things just technically won't work. If a client does not agree:**

**First make sure you are right.**

**Understand that you screwed up the first time in not explaining it correctly.**

**Get help formulating your explanation.**

**Carefully bring it up with help from others in a non-threatening way. Never blame the client for not understanding**

**Clients will always agree once the technology is understood.**

# Exception: Safety Issues

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- **Make sure it is really a safety issue and not merely a preference. Review with others.**

**Get help analyzing the issue. Never question the client's motives. Make it a win-win discussion.**

**Meet with the client with others from your group present**

**Listen to the client's reasons. He may have a different insight which is valid.**

**Only document the disagreement in an email, report, etc. after determining with help that there is an unbridgeable disagreement.**

**Stand by your decision and accept the consequences.**

**The manifold example.**

# 4<sup>rd</sup> Principle: A Professional Takes Responsibility for His Work

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- **Mistakes and Errors in Judgment Happen**
  - **Insufficient Data**
  - **Misleading or Incorrect Data**
  - **New Data / Revisions**
  - **Communications**

**Think about the potential effects of new information on the project as a whole**

**Correct errors as soon as practical**

**Verify that others realize the impact**

**Figure out how to avoid them in the future**

**Dehydrator slab example**

**If you do not know at the end of every job how you could have done it better you are not a “professional”.**

# **5<sup>th</sup> Principle: You must act ethically towards others.**

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- **Everyone deserves the same respect that we believe should be paid to us.**
  - **The right to be heard**
  - **The right to be treated with dignity**
  - **The right to earn a living**
  - **The right to be told what is happening**

**Do we really believe in this?**

# Examples of Unethical Behavior – Pecking Orders

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- **The “Global Pecking Order”**
  - **The Owner**
  - **Consultants**
  - **Vendors**
  - **Contractors**
  - **Grunts in the Field**
  
- **The “Corporate Pecking Order”**
  - **CEO**
  - **Vice President**
  - **Managers**
  - **Supervisor**
  - **Project Manager**
  - **Engineers**

# Examples of Unethical Behavior – Pecking Order

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- **The “Engineering Pecking Order”**
  - **Engineers**
  - **Designers**
  - **Procurement**
  - **Accounting**
  - **Secretaries**
  - **Other Support Staff**

# Examples of Unethical Behavior - Relationships

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- **Relationship Building is Good ... But is it unethical to :**
  - **Bribe people to get work**
  - **Accept kickbacks to award work**
  - **Elaborately entertain clients**
  
- **Giving to Charity is Good ... But is it unethical to:**
  - **Use purchasing power to force others to give**
  - **Use purchasing power to force others to sponsor costly social events**

# Examples of Unethical Behavior - Bidding

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- **There is nothing unethical about bidding**
- **But ... Preparing a bid costs money and resources**
- **It is unethical to:**
  - **Bid a job that you know may not be awarded**
  - **Bid someone you know you will not award the job**
  - **Withhold information bidders need to judge their chance of success – competition, evaluation criteria, etc.**
  - **Bid a job more than once without compensation**
  - **Take a value added idea from an unsuccessful bidder and give it to the successful bidder to implement without proper compensation**

# Examples of Unethical Behavior – Change Orders

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- **Complex engineered equipment, fabrication or construction will always have the need for a change order adjustment in price**
- **There is nothing unethical about protecting yourself from a vendor who is motivated to get the most out of change orders**
- **There is nothing unethical about protecting yourself from a client who is motivated to avoid paying for change orders**
- **It is unethical to:**
  - **Use future purchasing power to blackmail a vendor to avoid paying for extra work that was requested and performed**
  - **Hold a contractor to a legal requirement or a technicality when circumstances have clearly changed the intent**
  - **Demand something when you know your client is not able to realize it is not really a change in scope**

# What If I Act In An Unethical Manner?

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- **We all consider ourselves and our actions to be ethical**
- **But ... In the rush to do business, or because we don't have all the facts, or because we are distracted we all act unethically from time to time**
- **We all have bosses or clients who require us to do things we think are unethical**
- **It is unethical to:**
  - **Refrain from explaining to someone that they are asking you to do something that may be construed as unethical**
  - **Refrain from apologizing**

# So What Is the Payout for You?

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**Job Satisfaction- Knowing you are making a difference.**

**Gaining Respect for Your Contribution- being given ever more interesting and challenging assignments.**

**Learning By Doing and Becoming a More Valuable Employee – Career advancement.**

**Better Relations with Co-Workers – A more enjoyable work environment.**

**Better Reputation In Industry as a Doer and Leader**

# What Are the Risks to You of Being Professional?

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**You have to think about what you are doing and how it fits into the project goals.**

**You have to force yourself to speak up and not accept authority's answer as necessarily correct.**

**You have to educate yourself and ask questions so you can speak up.**

**You may be wrong and may have to admit it.**

**You have to constantly think about your behaviors and how they are perceived by all those around you.**

**You may have to be prepared to suffer short term negative consequences for the longer term principle.**

# **So, Are You going to be a Professional or Just Another Engineer?**

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**It is up to you.**

**There are many engineers who are not comfortable being a professional.**

**There are many engineers who don't want to expend the effort to be a professional.**

**Only you know what you are capable of doing and what you wish to accomplish.**